

MEMORANDUM

To: USACE Colonel Andrew D. Kelly, LTC Jennifer A. Reynolds, Richard McMillen, Kim Taplin, SFWMD Governing Board, Executive Director Drew Bartlett, Terrie Bates, Susan Gray, DEP Secretary Noah Valenstein

From: Periodic Scientists Conference Call Participants

Paul Tritaik - J.N. "Ding" Darling National Wildlife Refuge (NWR) Complex

James Evans & Holly Milbrandt - City of Sanibel

Keith Kibbey & Lesli Haynes - Lee County

Rae Burns - Town of Fort Myers Beach

Harry Phillips & Maya Robert - City of Cape Coral

Rae Ann Wessel & Rick Bartleson, Ph.D.-Sanibel Captiva Conservation Foundation

Subject: Caloosahatchee & Estuary Condition Report

Reporting Period: **March 12 - 18, 2019**

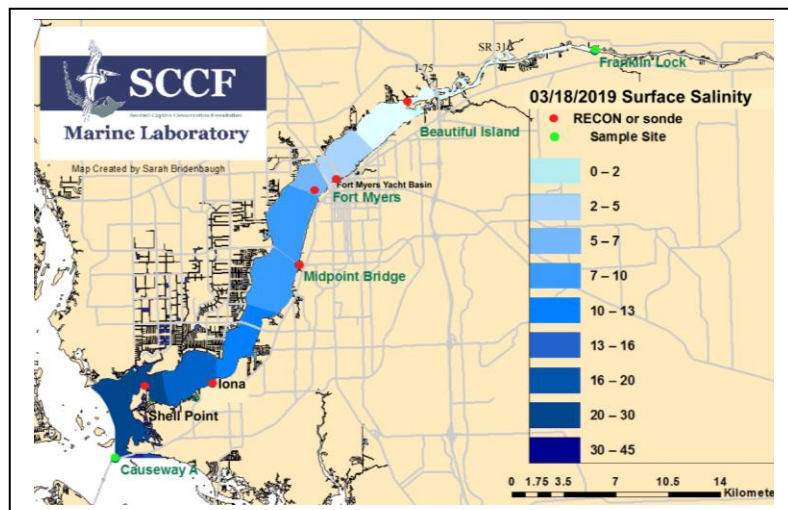
This report provides a scientific assessment of Caloosahatchee River and Estuary conditions and how these conditions affect the health, productivity and function of the system.

Caloosahatchee Condition Summary: Cyanobacteria is present in Lake Okeechobee and persists at Lee County sample sites along the Caloosahatchee and estuary. Caloosahatchee flows the past week averaged 1,873 cfs. Significant accumulations of drift algae are washing up on Gulf beaches and along the shorelines.

USACE Action: On 3/16/19 the U.S. Army Corps of Engineers initiated a 7-day pulse releases from Lake Okeechobee with average flow of **1,800 cfs** to the Caloosahatchee measured at **S-79** and **250 cfs** to the St. Lucie measured at **S-80**.

Recommendation: High nutrients are feeding dense accumulations of drift algae along Gulf beaches. **We recommend flows to the Caloosahatchee estuary at S-79 be reduced to 800-1,000 cfs.** While we support the need to lower lake levels prior to the rainy season nutrients in current releases are feeding algae blooms. We request the COE and SFWMD maximize storage in the Kissimmee Chain of Lakes (currently below schedule), maximize southward flows to the WCAs and utilize all dispersed water management projects to the full extent possible to help get the lake level down and minimize harmful flows to the estuaries.

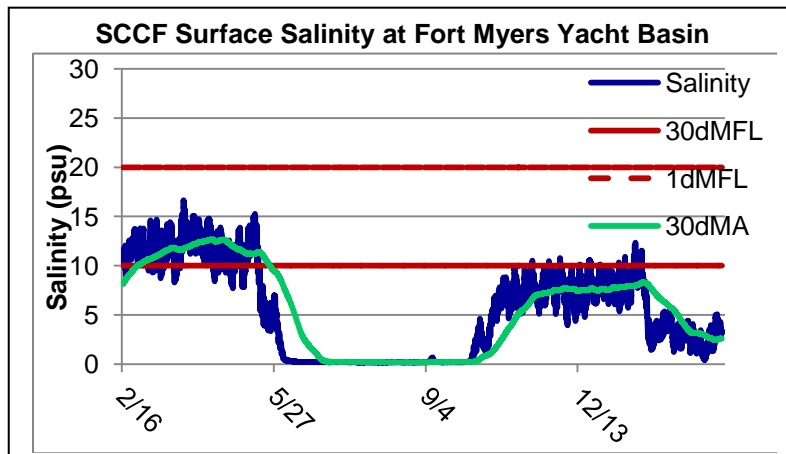
Lake Okeechobee Level:	12.12 ft. (Beneficial Use Sub-Band)	Last week: 12.42 ft.
Lake Okeechobee Inflow:	516 cfs	Lake Okeechobee Outflow: 3,368 cfs
Weekly Rainfall:	WP Franklin 0.75" Ortona 0.60"	Moore Haven 0.56"
Salinity Beautiful Island:	0.3 - 1.1 psu (SCCF RECON Marker 18)	Previous week 0.3 - 0.5 psu
Salinity Fort Myers:	3.0 - 10.9 psu (SCCF RECON)	Previous week 0.6 - 7.7 psu
Salinity Shell Point:	15 - 31 psu (SCCF RECON)	Previous week ND



Salinity (psu)			
	Current Value	Sustainable Range	High/Low
Beautiful Is	0.3 - 1.1	< 5 psu	In Range
Fort Myers	3.0 - 10.9	<10 psu	In Range
Shell Point	15 - 31	25 - 32 psu	In Range
Light (25% Iz depth meters)			
Fort Myers	0.64	1 meter	Low
Shell Point	1.14	2.2 meters	Low
Causeway	1.26	2.2 meters	Low

Lake Flows: Over the past 7 days **66,319 AF** of water was discharged from Lake Okeechobee; **31%** to the Caloosahatchee at **S-77**, **8.8%** to **St Lucie** at **S-308**, **57%** was discharged south to the **EAA**, a **net <1%** to the **L8** and **2.4%** to **S-310**.

ACOE Daily Reports			
Date	S79 Flow (cfs)	S78 Flow (cfs)	S77 Flow (cfs)
3/12/2019	2184	1430	2121
3/13/2019	1649	1206	1632
3/14/2019	1128	1186	1428
3/15/2019	869	705	1002
3/16/2019	1946	1114	855
3/17/2019	2764	1697	1559
3/18/2019	2573	1884	1807
7 day Avg	1873	1317	1486



Cyanobacteria bloom: No report from the Lee County Environmental Lab however **traces of cyanobacteria clumps** were reported in the water column at the **Davis Boat ramp** in the estuary.

Upstream of S-79/Franklin Conditions: On 3/19/19 the Olga Water Treatment plant reported chlorides of **55 mg/l**, apparent color **51 CU** and turbidity **1.29 NTU**. Trace of algae visible at the plant intake. Plant is online at 2,000 GPM.

Upper Estuary Conditions: The weekly average salinity at the Fort Myers Yacht Basin was **3.3 psu**, in the suitable range for tape grass growing between the Caloosahatchee US 41 Bridges and Beautiful Island.

Lower Estuary Conditions: The weekly average salinity at Shell Point was **23 psu**, in the suitable range for oysters and seagrass.

J.N. "Ding" Darling NWR:

Monitor Site	Salinity	Diss O2 (mg/L)	FDOM (qsde)	Chlorophyll (µg/L)
McIntyre Creek	33.1 – 35.6	1.8 – 9.1	10.0 – 15.9	1.6 – 3.5
Tarpon Bay	27.6 – 32.8	5.0 – 9.3	7.4 – 18.4	0.9 – 19.5
Wildlife Drive	30.7 – 33.0	0.7 – 14.5	-----	0.4 – 7.0
Wulfert Flats	10.5 – 31.2	2.2 – 11.2	-----	-----

Beach conditions: Increasing accumulations of red drift algae are washing up on Sanibel and Fort Myers Beach with dense drifts in the wash zone along the shoreline and underwater.

Red Tide: On 3/15/19 the Florida Fish and Wildlife Conservation Commission reported **NO Florida red tide**, *Karenia brevis*, off the state of Florida.

Wildlife Impacts: The past week, SCCF reported **two dead loggerhead sea turtles: 1 on North Captiva and 1 on Sanibel**. **Two dead dolphin were reported near Captiva and 1 dead manatee was reported by Sanibel Police**.

Manatees: Lee County's Manatee Park staff reported **approximately 5 manatees** in the warm water of the Orange River and FPL cooling canal in the past week. River water temperatures ranged from **75° - 85° F**.

Caloosahatchee Stations	Chlorophyll (µg/L)	fDOM (qse)	Turbidity (NTU)	25% lo depth (meters)
Target Values	< 11	CE <70 SCB <11	CE < 18 SCB < 5	CE = 1 m SCB = 2.2m
Fort Myers	4.8	273	3.3	0.64
Shell Point	3.5	118	2.5	1.14
Causeway	2.8	101	2.3	1.26

Target light penetration: CE- Caloosahatchee Estuary = 1 m
SCB- San Carlos Bay = 2.2 meters
Definition of 25% I_z: z where I is 25% of surface I.
I = irradiance, z = depth

Drift algae and *Ulva* accumulating in the water and washing up along Fort Myers Beach from the Pier to the Hercules Beach Access, 3/18/19.

Photos Town of Fort Myers Beach



Drift algae accumulating along Sanibel beaches and in the wash zone from Lighthouse to Bowman's beach 3/18/19.
Photo City of Sanibel

